

### ABSTRACT

Improved boron-based metal working and machining fluids. Boric acid and boron-based additives that, when mixed with certain carrier fluids, such as water, cellulose and/or cellulose derivatives, polyhydric alcohol, polyalkylene glycol, polyvinyl alcohol, starch, dextrin, in solid and/or solvated forms result in improved metalworking and machining of metallic work pieces. Fluids manufactured with boric acid or boron-based additives effectively reduce friction, prevent galling and severe wear problems on cutting and forming tools.